

ABSTRACT OF THE DISCLOSURE

The present invention provides a method, computer-readable medium and device for dynamically managing allocation of bandwidth in a packet network using a Dynamic Setting Scheme (DSS) for Class Based Queuing (CBQ). The method includes the steps of maintaining a minimized reserved portion of bandwidth to minimize delay jitter and maximizing a shared portion of bandwidth to maximize overall bandwidth utilization. Allocation of bandwidth may be based on a sharing tree hierarchical scheme that provides for temporary borrowing of bandwidth by real-time applications from bandwidth of non-real-time applications and blocks borrowing of bandwidth by non-real-time applications from bandwidth of real-time applications. DSS typically provides for using measurable parameters, such as queue length and number of borrowing attempts per a predetermined length of time/observation window, as control triggers for implementing adjustment of bandwidth allocation. In one embodiment, the steps include measuring a predetermined parameter at predetermined observation window times and dynamically adjusting allocated bandwidth for parent classes of real-time traffic by adjusting an average of the predetermined parameter to have a value within a predetermined stable region.